



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,908	06/14/2005	Jurgen Osterlanger	INA-1	5799
20311 7590 03/18/2009 LUCAS & MERCANTI, LLP 475 PARK AVENUE SOUTH 15TH FLOOR NEW YORK, NY 10016				
EXAMINER				
WATTS, ALAN B				
ART UNIT		PAPER NUMBER		
3656				
MAIL DATE		DELIVERY MODE		
03/18/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/538,908

**Applicant(s)**

OSTERLANGER, JURGEN

**Examiner**

ALAN B. WAITS

**Art Unit**

3656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 4-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the load". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 5, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatewaki et al US 2002/0148672 in view of Saruwatari et al US 2002/0096389.

Tatewaki discloses a similar device comprising:

Re clm 1:

- A rolling-body screw mechanism (B, fig 5) having an axis of rotation
- A housing divided into two housing parts (233 and 231, respectively, fig 5) transversely to the axis of rotation

- A hollow rotor (102, fig 2) mounted rotatably on a spindle nut (103, fig 2)
- A threaded spindle (101b, fig 2)
- The spindle nut being drive-connected to the rotor (103 is connected to 102, fig 2)
- A rolling mounting means (113, fig 2) provided on only one housing part (233, fig 5) of the housing
- The rolling mounting means is formed by a multi-row angular ball bearing ([0080], last sentence)
- An outer ring (outside of 113, fig 2) seated in a housing bore (slot that 113 fits into 233, fig 5) of the one housing part
- The mounting means is positioned with respect to the spindle nut to receive all of the loading there from in a cantilevered manner (fig 2)

Although Tatewaki does indeed disclose:

- Ball grooves (groove on inner ring where ball 108 sits, fig 2) of the angular ball bearing (113, fig 2) are formed on an outer circumference of the spindle nut (103, fig 2)

he does not disclose:

- Ball grooves (groove on inner ring where ball 108 sits, fig 2) of the angular ball bearing (113, fig 2) being formed directly on an outer circumference of the spindle nut (103, fig 2)

Saruwatari teaches:

- Ball grooves (of bearing 14, fig 2) of the ball bearing (14, fig 2) being formed directly on an outer circumference of the spindle nut (5, fig 2) for the purpose of reducing the number of parts required for assembly and thus reducing the cost of the device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Tatewaki and provide:

- Ball grooves of the angular ball bearing being formed directly on an outer circumference of the spindle nut for the purpose of reducing the number of parts required for assembly and thus reducing the cost of the device.

Tatewaki further discloses:

Re clm 4:

- The rolling mounting means is arranged axially within a construction space occupied by the spindle nut (rolling mounting means 113 is in the same construction space as nut 103, fig 2)

Re clm 5:

- The rotor (102, fig 2) is arranged axially within a construction space (region that the nut occupies, fig 2) occupied by the spindle nut (103, fig 2)

Re clm 9, Tatewaki discloses a similar device comprising:

- A rolling-body screw mechanism (B, fig 5) having an axis of rotation
- A housing divided into two housing parts (233 and 231, respectively, fig 5) transversely to the axis of rotation

- A hollow rotor (102, fig 2) mounted rotatably on a threaded spindle nut (103, fig 2)
- A threaded spindle (101b, fig 2)
- The spindle nut being drive-connected to the rotor (103 is connected to 102, fig 2) at a position axially displaced from the threads of the spindle nut (102 is connected at a place where the nut has not threads, fig 2)
- A rolling mounting means (113, fig 2) provided on only one housing part (233, fig 5) of the housing
- The rolling mounting means is formed by a multi-row angular ball bearing ([0080], last sentence)
- An outer ring (outside of 113, fig 2) seated in a housing bore (slot that 113 fits into 233, fig 5) of the one housing part
- The mounting means is positioned with respect to the spindle nut to receive all of the loading there from in a cantilevered manner (fig 2)

Although Tatewaki does indeed disclose:

- Ball grooves (groove on inner ring where ball 108 sits, fig 2) of the angular ball bearing (113, fig 2) are formed on an outer circumference of the spindle nut (103, fig 2)

he does not disclose:

- Ball grooves (groove on inner ring where ball 108 sits, fig 2) of the angular ball bearing (113, fig 2) being formed directly on an outer circumference of the spindle nut (103, fig 2)

Saruwatari teaches:

- Ball grooves (of bearing 14, fig 2) of the ball bearing (14, fig 2) being formed directly on an outer circumference of the spindle nut (5, fig 2) for the purpose of reducing the number of parts required for assembly and thus reducing the cost of the device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Tatewaki and provide:

- Ball grooves of the angular ball bearing being formed directly on an outer circumference of the spindle nut for the purpose of reducing the number of parts required for assembly and thus reducing the cost of the device.

3. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatewaki et al US 2002/0148672 in view of Saruwatari et al US 2002/0096389 as applied to claims 1 and 4 above, and further in view of R. E. Osborne USP 2964967.

Tatewaki in view of Saruwatari discloses all the claimed subject matter as described above.

Re clm 6 and 7:

Although Tatewaki discloses the rolling-body screw mechanism is a ball screw mechanism (103, fig 2) with a deflection ([0081]) for balls of the ball screw mechanism

He does not explicitly disclose the rolling-body screw mechanism is a ball screw mechanism with an outer deflection for balls of the ball screw mechanism.

Osborne teaches the rolling-body screw mechanism (16, fig 1) is a ball screw mechanism with an outer deflection (20, fig 1) for balls (22, fig 1) of the ball screw mechanism for the purpose of providing for an improved means for circulating the balls in the ball nut.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Tatewaki and provide the rolling-body screw mechanism is a ball screw mechanism with an outer deflection for balls of the ball screw mechanism, as taught by Osborne, for the purpose of providing for an improved means for circulating the balls in the ball nut.

Tatewaki in view of Osborne further disclose:

Re clm 7:

- The spindle nut (103, fig 2; Tatewaki) is provided, in a region radially between the threaded spindle (101b, fig 2; Tatewaki) and the rolling mounting means (113, fig 2; Tatewaki)
- A return bore (the way tube 20 connects to grooves 18, fig 1; Osborne) for balls of the ball screw mechanism

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tatewaki et al US 2002/0148672 in view of Saruwatari et al US 2002/0096389 as applied to claim 1 above, and further in view of Bugosh US 2003/0192734.

Tatewaki discloses all the claimed subject matter as described above.

Tatewaki does not disclose:

- The rotor (102, fig 2) being provided with a driving surface for drive belts



Bugosh teaches:

- The rotor (82, fig 2) being provided with a driving surface (outside of 82, fig 2) for drive belts (164, fig 2)

for the purpose of providing an improved means of driving the rotor.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Tatewaki have the rotor being provided with a driving surface for the drive belts on the circumference of the rotor for the purpose of providing an improved means of driving the rotor.

#### ***Response to Arguments***

5. Applicant's arguments filed December 2, 2008 have been fully considered but they are not persuasive.

Applicant argues that Tatewaki's bearing is taught to be situated directly above the load generating area of the spindle. The examiner disagrees since the bearing is located off to one side of the spindle nut. Since forces generated through the rotor 102 are located on the other side of the nut from the bearing, that this arrangement of the bearing and rotor provide a cantilevered bearing load.

#### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN B. WAITS whose telephone number is (571)270-3664. The examiner can normally be reached on Monday through Friday 7:30 am to 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrick H. Mackey/

Application/Control Number: 10/538,908

Page 10

Art Unit: 3656

Supervisory Patent Examiner, Art  
Unit 3653

/Alan B Waits/  
Examiner, Art Unit 3656